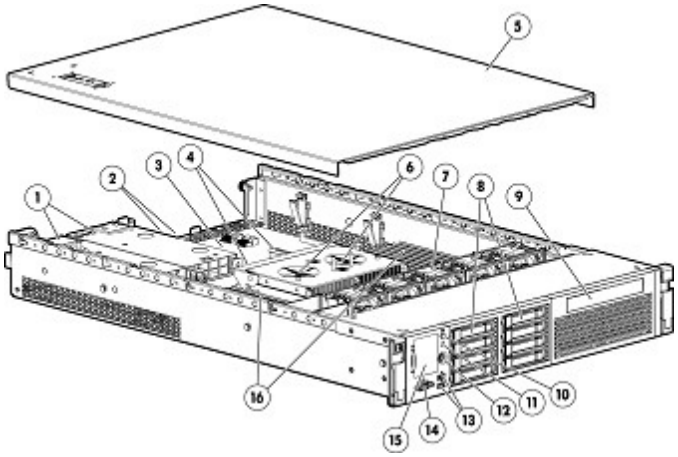
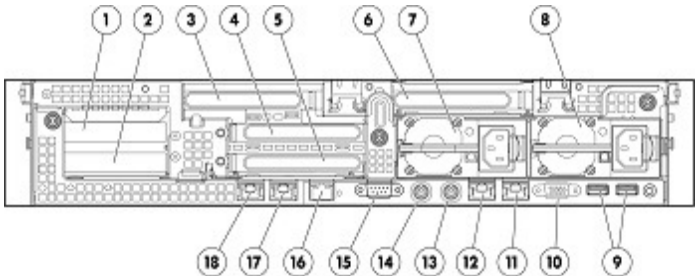
Overview





Front View:

1. Redundant Power Supplies
2. Two HP NC382i Dual Port Multifunction NICs
3. SD Card Reader
4. PCI Riser Slots
5. Quick Removal Access Panel
6. AMD Opteron Processors (up to 2)
7. Hot Plug Redundant Fans
8. Hard Drive Bays
9. Slimline Optical bay
10. UID LED Button
11. Health LED
12. Power On/Standby Button and System Power LED
13. USB Connectors (2)
14. Video Connector
15. System Insight Display
16. Twenty-four sockets for DDR3 Memory

Rear View:

1. PCI slot 5
2. PCI slot 6
3. PCI slot 4
4. PCI slot 2
5. PCI slot 3
6. PCI slot 1
7. Power Supply 2
8. Power Supply 1
9. USB Connectors (2)
10. Video Connector
11. NIC 1 Connector
12. NIC 2 Connector
13. Mouse Connector
14. Keyboard Connector
15. Serial Connector
16. iLO3 connector
17. NIC 3 Connector
18. NIC 4 Connector

At A Glance

As the leading 2P 2U AMD rack server, the HP ProLiant DL385 G7 is designed with virtualization in mind, yet flexible and expandable to support any business need in many environments from corporate datacenters to sophisticated SMBs.

- Processors:
  - AMD Eight- or Twelve-Core, 6100 series processors with 12MB Level 3 cache for blazing performance; systems support up to 2 processors (2 processors standard on all Performance models)
  - Preconfigured Performance models save valuable deployment time at a discounted bundle price
  - AMD SR5690 Northbridge and SP5100 Southbridge
- Memory:
  - Total of 24 DIMM slots
  - Up to 256GB using RDIMMs or 64GB using UDIMMs

    NOTE: if only one processor is installed, only half the DIMM slots are available.

Overview

- Storage Controller:
  - High Performance Models: HP Smart Array P410i/1G FBWC Controller
  - Base Models: HP Smart Array P410i/256MB Controller
  - Entry Models: HP Smart Array P410i/Zero Memory Controller
    - Upgrade to 256MB cache with optional battery for BBWC, or 512MB BBWC/FBWC or 1G FBWC options
- Internal Drive Support:
  - Standard (8) small form factor (SFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives
    - Optional second drive cage for additional (8) SFF drive bays (total 16)
    - Optional cage for (6) Large Form Factor SAS/SATA hard drive bays
  - Slimline media bay supporting Optical Drive (ships standard on performance models)
    NOTE: The Optical Drive option is not available when you upgrade with the additional 8 SFF drive cage, or in the LFF Models.
- Network Controller:
  - Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
- Expansion Slots:
  - Up to 6 PCI slots (PCIe slots are Gen 2)
  - Standard BTO riser with PCIe (1) x8 FL/FH, (2) x4 HL/FH
  - Optional second risers with PCIe (1) x8, (2) x4; or a PCIe/PCI-X mixed riser with (2) PCI-X, (1) x8; or a x16 225w PCIe riser with (1) x16; or a (2) x8 Dual Port 10GbE riser
- USB 2.0 Ports:
  - 6 total ports: (2) ports in front; (2) ports in back; (1) port internal; (1) port internal for usb tape drive
- Redundancy:
  - Fully redundant hot plug fans (Entry/Base models: four fans; Performance models: six fans)
  - Hot plug power supply with optional redundancy (Included in Performance models)
- HP Unique Technology:
  - Built-In HP Thermal Logic Technologies
    - Sea of Sensors, Intelligent automated management of power and cooling systems to save cost
    - Dynamic Power Capping, customer set limits for reduced power usage within performance requirements
- Power Supply:
  - Dual Common Slot Bay for Right Sized, Hot plug and Redundant Power options
    - HP 750W CS HE Gold Power Supply
    - HP 460W CS HE Gold Power Supply
    - HP 1200W -48V DC CS Power Supply
- Infrastructure Management:
  - Convenient Systems Insight Display for quick and easy front view server diagnostics, along with status LEDs, Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU)
  - HP Integrated Lights-Out (iLO) management processor simplifies server setup, health monitoring and recovery, power and thermal control, and lights-out remote administration.
  - HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, control and optimize your IT infrastructure through a single, simple management console. Insight Control supports both Windows and Linux-based central management servers.
  - HP Insight Dynamics for ProLiant, a product option, is an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. This ultimately enables them to dynamically keep pace with the organization's changing business requirements.
- Operating Systems and Virtualization Software Support for ProLiant Servers:
  - Supports Windows, RHEL, SLES, OEL, Vmware, Citrix XenServer
- Form Factor:
  - Rack (2U), (3.5-inch)
- Deployment/Serviceability:
  - Quick Deploy Rail System includes sliding universal rails, an ambidextrous cable management arm and quick release

levers for fast and easy serviceability
  - Tool-less access to all system components for easy in rack serviceability
  - Customer Self Repair (CSR): HP products are designed with many CSR parts to minimize repair time and allow for greater flexibility in performing defective parts replacement
- Warranty:
  - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
    NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:
    http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Standard Features

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor One of the following depending on Model	Twelve-Core Processors AMD Opteron™ Processor Model 6176SE (2.3 GHz, 12MB Level 3 Cache, 105W) AMD Opteron™ Processor Model 6174 (2.2 GHz, 12MB Level 3 Cache, 80W) AMD Opteron™ Processor Model 6172 (2.1 GHz, 12MB Level 3 Cache, 80W) Eight-Core Processors AMD Opteron™ Processor Model 6136 (2.4 GHz, 12MB Level 3 Cache, 80W) AMD Opteron™ Processor Model 6134 (2.3 GHz, 12MB Level 3 Cache, 80W) AMD Opteron™ Processor Model 6128 (2.0 GHz, 12MB Level 3 Cache, 80W) AMD Opteron™ Processor Model 6128HE (2.0 GHz, 12MB Level 3 Cache, 65W) NOTE: Processor wattage references reflect Average CPU Power (ACP). For more information on ACP visit: http://www.amd.com/powernow. NOTE: Up to 2 processors supported. High Performance Model configurations include two processors, 16 GB system memory, 1G storage controller memory, FBWC, DVDRW, ICE license, Redundant 750W Power Supplies, and 6 hot plug redundant fans.	
Cache Memory	12MB Level 3 cache memory	
Upgradeability	Upgradeable to two processors	
Chipset	AMD SR5690 Northbridge and SP5100 Southbridge	
Memory Protection	Advanced ECC	
Memory One of the following depending on Model	Type	DDR3 Registered (RDIMM) and Unbuffered (UDIMM) NOTE: If only one processor is installed, only half of the DIMM slots are available.
	Standard (Entry Models)	4GB (2 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Standard (Base Models)	8GB (4 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Standard (Performance Models)	16GB (8 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Maximum (RDIMM)	256GB
	Maximum (UDIMM)	64GB
	NOTE: If only one processor is installed, only half the DIMM slots are available NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1333MHz, 1066MHz, or 800MHz. Please see the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.	

Standard Features

Network Controller

Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
NOTE: 1GB of memory is sufficient to support up to eight Total Ports. 2GB of memory is required if nine or more Total Ports have been selected.

Expansion Slots

Primary Riser (Standard)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCI-e Gen2	x8	x16	6	Full Length/Full Height	
2	PCIe Gen2	x4	x8	12	Half length, full height	
3	PCIe Gen 2	x4	x8	15	Half length, full height	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported

PCIe Riser (Optional Secondary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
4	PCIe Gen2	x8	x16	18	Full Length/Full Height	
5	PCIe Gen2	x4	x8	24	Low Profile	
6	PCIe Gen2	x4	x8	27	Low Profile	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported

PCIe/PCI-X Riser (Optional Primary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCI-X	64-bit	N/A	7	Full length, Full height	
2	PCI-X	64-bit	N/A	7	Half Length, Full Height	
3	PCIe Gen 2	x8	x8	11	Half Length, Full Height	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported
NOTE: PCI-X support is limited to PCI-X cards only

PCIe/PCI-X (Optional Secondary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
4	PCI-X	64-bit	N/A	19	Full Length/Full Height	

	5	PCI-X	64-bit	N/A	19	Low Profile
	6	PCIe Gen2	x8	x8	23	Low Profile

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported
NOTE: PCI-X support is limited to PCI-X cards only

x16 PCIe Riser (Optional Primary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCIe Gen2	x16	x16	6	Full Length/Full Height	Supports up to 225W

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported

x16 PCIe Riser (Optional Secondary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCIe Gen2	x16	x16	18	Full Length/Full Height	Supports up to 225W

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported

Dual Port 10GbE Riser (Optional Primary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCIe Gen2	x8	x16	6	Full Length/Full Height	
2	PCIe Gen2	x8	x16	9	Half length, full height	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported
NOTE: The shared network port is only supported in the secondary riser connector

Dual Port 10GbE Riser (Optional Secondary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
4	PCIe Gen2	x8	x16	18	Full Length/Full Height	
5	PCIe Gen2	x8	x16	21	Low Profile	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector
NOTE: Only single wide cards are supported
NOTE: The shared network port is only supported in the secondary riser connector

Standard Features

Storage Controller One of the following depending on Model	Entry Models:	HP Smart Array P410i/Zero Memory Controller
	Base Models:	HP Smart Array P410i/256 MB Controller **Available upgrades**: Battery Kit Upgrade (462969-B21) to enable BBWC and 256MB cache. 512MB BBWC (462967-B21), 512MB FBWC (534916-B21), and 1G FBWC (534562-B21) option kits also available. RAID 0/1/1+0/5/5+0 standard on the P410i/256. RAID 6 requires a minimum of 256MB cache with battery kit upgrade or BBWC/FBWC option kit and SAAP license key. NOTE: RAID 6 requires purchase of HP Smart Array Advanced Pack (516471-B21).
	High Performance Models:	HP Smart Array P410i/1G FBWC Controller

Storage	Optical Drive	None Standard HP Slim SATA DVD RW Optical Drive Standard on Performance Models
	Hard Drives	None Standard

Maximum Internal Storage	Hot Plug SFF SAS	8.0TB	16 x 500GB (with optional SFF drive cage)
	Hot Plug LFF SAS	12TB	6 x 2TB (with optional LFF drive cage)

Interfaces	Serial	1
	Pointing Device (Mouse)	1
	Graphics	1
	Keyboard	1
	VGA	2 (1 front, 1 back)
	Network RJ-45 (Ethernet)	4
	iLO3 remote management port	1
	USB 2.0 Ports	6 (2 front, 2 back, 2 inside - one for internal tape) NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html.

Graphics

Integrated ATI ES1000

- 16 bit color: maximum resolution of 1600 x 1200
- 32 bit color: maximum resolution of 1280 x 1024

NOTE: Maximum resolution available via iLO3 remote console is 1280 x 1024 (for 32 bit color) and 1600 x 1200 (DVR max resolution).

Standard Features

Form Factor	Rack (2U), (3.5-inch)	
HP Insight management software	HP Insight Foundation	Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters. HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: http://www.hp.com/go/foundation. The foundation pack includes: • HP SmartStart • HP Management • HP ProLiant Firmware Maintenance SmartStart version supported (minimum): SmartStart 8.40. http://www.hp.com/servers/smartstart
	HP Integrated Lights-Out (iLO) for ProLiant	HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: www.hp.com/go/iLO
	HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight.
	HP Insight Dynamics for ProLiant	HP Insight Dynamics for ProLiant, a product option, is advanced infrastructure management software that enables IT staff to instantly adjust their environments to meet dynamic business demands by provisioning, optimizing and protecting complex infrastructure in minutes. It's a powerful toolkit, integrated-by-design, that accelerates complex technology projects and simplifies daily operations, transforming data center economics. With Insight Dynamics IT professionals can plan capacity and power continuously, balance workloads across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources

using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP StorageWorks Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location.

NOTE: For more information, visit:
http://www.hp.com/go/insightdynamics

Industry Standard Compliance	ACPI 2.0 Compliant PCIe 2.0 Compliant PCI 2.2 Compliant WOL Support Microsoft® Logo certifications USB 2.0 Support
Intelligent Manageability	HP Systems Insight Manager software SmartStart Management Agent Redundant ROM Remote Flash ROM ROM-Based Setup Utility (RBSU) Integrated Management Log Automatic Server Recovery (ASR) Dynamic Sector Repairing (with Smart Array controller) Drive Parameter Tracking (with Smart Array controller) Pre-Failure Warranty (covers processors, SAS hard drives and memory)
Security	Power-on password Keyboard password QuickLock, Network Server Mode Serial interface control Administrator's password

Standard Features

Security - Trusted Platform Module

Trusted Platform Module option kit

The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline.
For more information about TPM, including a white paper, go to: www.hp.com/go/TPM

NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.
NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

UPS and PDU Power Cord Matrix

Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.

Power Supply

HP has a new design for ProLiant power. The new Common Slot Power Supply bay. This design provides the customer with commonality in power supplies across multiple platforms to save on the cost of spares and allows HP to offer multiple power solutions to fit the customers' needs. Many HP ProLiant Servers come with Common Slot, High Efficiency and Right-Size Power Supplies. Common Slot (CS) designates commonality of the power supply across multiple ProLiant servers. HP's new Common Slot power supplies are designed for highest efficiency to provide power efficiency without degrading performance of the ProLiant. Power Supplies will have efficiency ratings up to 92%. There are three Right Size power options available, depending on the configuration of your server. To make sure you select the correct power supply to meet your configuration, we suggest that you use the HP Power Advisor (www.hp.com/go/hppoweradvisor) to decide the "Right-Size" for your configuration. All HP Common Slot power sources are UL, CE Mark Compliant, Hot Plug and Redundant.

Common Slot ProLiant

It is highly recommended that you use the HP Power Calculator in defining the "Right-Size" power supply for your needs. HP offers the following Power Supply Options:

- HP 460Watts, Common Slot, 92% Efficiency
- HP 750Watts, Common Slot, 92% Efficiency
- HP 1200W -48V DC CS Power Supply

HP's ProLiant Common Slot Power supplies (460W & 750W) meet multiple Energy Efficiency Initiatives. Climate Savers Computing Initiative GOLD, ECOS Consulting 80PLUS GOLD and plans on offering models that meet the Energy Star for Server requirements when they are published.

Redundant Power: Optional (1+ 1 or n+n redundant) power supplies can be purchased through power supply option kits (see Redundant Options for part numbers).

NOTE: BTO Performance models include two power supplies; BTO Base and Entry models include one power supply. On CTO models, power supply must be selected from available options.

Standard Features

System Fans	Hot plug fans ship standard, N+1 fully redundant (3+1) for 1 processor, (5+1) for 2 processors NOTE: Processor option kits include 2 additional fans when upgrading to 2 processors.
Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Enterprise Linux (OEL) VMware Citrix XenServer NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page www.hp.com/support/DL385G7
Rack Airflow Requirements	Rack 10000 G2 series Cabinets The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors. CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment: • Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of holes evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). • Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm). CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage. NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: www.hp.com/servers/dl385-g7.
Rack Kit	Quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 G2 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management. NOTE: Cable management arm must be removed to access hot-plug power supplies when the cable management arm is mounted on the right. NOTE: High Airflow Inserts (High Air Flow Rack Door Insert for the 7142 Rack (single) - PN: 327281-B21; or High Air Flow Rack Door Insert for the 7142 Rack (6-pack) - PN: 327281-B22) are required to support the HP ProLiant DL385 in 7000 series racks. The DL385 Cable Management Arm is not supported on 7000 series racks.

Standard Features

Telco Rack Support	Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions: http://www.hp.com/go/rackandpower
Factory Express Portfolio for Servers and Storage	HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches. For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express.
HP Enterprise Configurator	The HP eConfigure-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator.
HPC Interconnects	NOTE: High Performance Computing (HPC) interconnect technologies are available for the DL380 under the Cluster Platform product portfolio. These high-speed interconnects are fully supported by HP when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPC Clusters with InfiniBand or Gigabit Ethernet Interconnects: http://www.hp.com/techservers/clusters/ucp/index.html InfiniBand — PCI-Express Gen2 adapters Gigabit Ethernet — Use embedded ports 10 Gb Ethernet — PCI-Express Gen2 adaptors

Standard Features

Service and Support

HP Care Pack services provide total care and support expertise with committed response designed to meet your IT and business needs.

HP Care Pack services include coverage for the HP branded hardware options qualified for the server and purchased at the same time or afterward that are internal to the enclosure. This also includes the 22" and smaller external monitors and tower UPS options up to 3kVA. These items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, and standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

To fully capitalizing on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions, provides a range of support services designed to meet the varying needs of your business. Whether an SMB, or large global corporation, HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

Recommended Service - simplify ProLiant solution implementation, maintenance, and management.

- Support: 3-Year 4-Hour response 24x7 Same Business Day Coverage only
- Service: Installation and Start up only

Enhanced Service - optimize service level to increase IT performance and availability.

- Support: 3-Year Support Plus 24 only

Refer to the information on "Installation & Start-Up" for service on ProLiant server and Microsoft, or Linux O/S per the Customer Description and/or Data Sheet; to be delivered on a scheduled basis 8am-5pm, M-F, excluding HP holidays.

NOTE: For a complete listing of service offerings and information visit:
http://www.hp.com/services/proliantservices
http://www.hp.com/go/proliant/carepack

Performance Models

HP ProLiant DL385 G7 6174 2.2GHz Twelve-Core Performance Rack Server 573087-xx1	Processor(s)	(2) Twelve-Core AMD Opteron™ Processor Model 6174 (2.2 GHz, 80W)
	Cache Memory	12MB L3 cache
	Memory	16GB (8 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/1GB FBWC Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays
	Optical Drive	Slim SATA DVD-RW Optical Drive
	Power Supply	(2) 750W 92% power supplies
	Insight Control Environment (ICE)	HP Insight Control Environment No Media single server license, including 1 year of 24x7 Technical Support and Updates
	Fans	6 Hot Plug Fully Redundant Fans
	Form Factor	Rack (2U), (3.5-inch)

Base Models

HP ProLiant DL385 G7 6172 2.1GHz Twelve-Core Base Rack Server 573088-xx1	Processor(s)	(1) Twelve-Core AMD Opteron™ Processor Model 6172 (2.1 GHz, 80W)
	Cache Memory	12MB L3 cache
	Memory	8GB (4 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays
	Optical Drive	Not included on Base Model
	Power Supply	(1) 460W 92% power supply
	Fans	4 hot plug redundant fans
	Form Factor	Rack (2U), (3.5-inch)

HP ProLiant DL385 G7 6136 2.4GHz Eight-Core Base Rack Server 585335-xx1	Processor(s)	(1) Eight-Core AMD Opteron™ Processor Model 6136 (2.4 GHz, 80W)
	Cache Memory	12MB L3 cache
	Memory	8GB (4 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays

Models

	Optical Drive	Not included on Base Model
	Power Supply	(1) 460W 92% power supply
	Fans	4 hot plug redundant fans
	Form Factor	Rack (2U), (3.5-inch)

Entry Models

HP ProLiant DL385 G7 6128 2.0GHz Eight Core Entry Rack Server 573089-xx1	Processor(s)	(1) Eight-Core AMD Opteron™ Processor Model 6128 (2.0 GHz, 80W)
	Cache Memory	12MB L3 cache
	Memory	4GB (2 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/Zero Memory Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays
	Optical Drive	Not Included on entry model
	Power Supply	(1) 460W 92% power supply
	Fans	4 hot plug redundant fans
	Form Factor	Rack (2U), (3.5-inch)

Country Code Key	xx = 00	U.S.
	xx = 20	Brazil
	xx = 29	Japan
	xx = 37	APD
	xx = 42	Europe
	xx = AA	PRC

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.
NOTE: HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.
NOTE: FIO indicates that this option only available as a Factory Installable Option.

Step 1: Base Configuration (choose one of the following configurable models)

HP Models	HP DL385G7 SFF CTO Chassis	573122-B21
	Factory Integrated Model ships with:	
	(8) SFF Serial Attached SCSI (SAS) Drive Bays Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) PCI-Express Riser Cage One IEC Power cord Hot plug fans (fully redundant) NOTE: 4 fans one processor models; 6 fans two processor models Rack (2U), (3.5-inch) NOTE: this option removes the optical media bay and 8 SFF drive bays	
	HP DL385G7 LFF CTO Chassis	573123-B21
	Factory Integrated Model ships with:	
	(6) LFF Serial Attached SCSI (SAS) Drive Bays NOTE: LFF configuration does not support internal optical drive Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) PCI-Express Riser Cage One IEC Power cord Hot plug fans (fully redundant) NOTE: (4 fans one processor models; 6 fans two processor models) Rack (2U), (3.5-inch)	

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

HP Processors	**Twelve-Core Processors**	
	AMD Opteron™ Processor Model 6176SE (2.3 GHz, 12MB Level 3 Cache, 105W), FIO	585322-L21
	AMD Opteron™ Processor Model 6174 (2.2 GHz, 12MB Level 3 Cache, 80W), FIO	585320-L21
	AMD Opteron™ Processor Model 6172 (2.1 GHz, 12MB Level 3 Cache, 80W), FIO	585324-L21
	Eight-Core Processors	
	AMD Opteron™ Processor Model 6136 (2.4 GHz, 12MB Level 3 Cache, 80W), FIO	585326-L21
	AMD Opteron™ Processor Model 6134 (2.3 GHz, 12MB Level 3 Cache, 80W), FIO	585328-L21
	AMD Opteron™ Processor Model 6128 (2.0 GHz, 12MB Level 3 Cache, 80W), FIO	585330-L21
	AMD Opteron™ Processor Model 6128HE (2.0 GHz, 12MB Level 3 Cache, 65W), FIO	585332-L21
	NOTE: If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21. If selecting 585320-L21 and high performance features are desired, select High Performance Pack in Step 3 below.	
HP Memory	NOTE: DIMM banks are active only when the corresponding processor socket is	

	populated.	
	Registered DIMMs (RDIMMs)	
	HP 2GB 2Rx8 PC3-10600R-9 Kit	593907-B21
	HP 4GB 1Rx4 PC3-10600R-9 Kit	593911-B21
	HP 4GB 1Rx4 PC3L-10600R-9 Kit	604500-B21
	HP 8GB 2Rx4 PC3-10600R-9 Kit	593913-B21
	HP 8GB 2Rx4 PC3L-10600R-9 Kit	604502-B21
	HP 16GB 4Rx4 PC3-8500R-7 Kit	593915-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 2GB 2Rx8 PC3-10600E-9 Kit	593921-B21
	HP 4GB 2Rx8 PC3-10600E-9 Kit	593923-B21
	NOTE: PC3L is a low voltage memory	
HP Power Supplies	NOTE: Refer to HP Power Advisor when selecting a power supply for your configuration, www.hp.com/go/hppoweradvisor. Many HP ProLiant Servers now offer new power options, including Common Slot Power Supplies. These power supplies come in multiple power ratings and higher efficiency levels to offer the Right Size solution to fit your configuration. This provides improved power delivery and the advantage of reclaiming lost power. Prior to making a power supply selection it is "highly recommended" that the "HP Power Advisor" is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor	
	HP 460W CS HE Gold Power Supply	503296-B21
	HP 750W CS HE Gold Power Supply	512327-B21
	HP 1200W-48V DC Common Slot Power Supply	437573-B21
	NOTE: DC power supplies contain a -48V DC power cord designed for in rack DC power rectifiers.	

Step 3: Choose Additional Factory Integratable Options

HP Performance Packs	The HP ProLiant DL385 G7 performance packs are necessary to configure a HP ProLiant DL385 G7 Performance Model. HP ProLiant DL385 G7 Performance model includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The performance pack includes a 2nd processor, two additional fans, 1G/FBWC, a second 750W CS HE power supply and Insight Control (ICE) license. To complete the configuration of a Performance model, select the Slim SATA DVD-RW Optical Drive Kit (481043-B21).	
	HP DL385G7 6174 HPM FIO Perf Pack	585334-B21
HP Insight Software	HP Insight Control, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates	582765-B21
	HP Insight Control for Linux, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates	TC203A

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" section below.

NOTE: Some options may not be available for factory integration. Please contact an HP sales representative for additional information.

HP Unique Options	HP StorageWorks RDX320 Internal Removable Disk Backup System for DL Servers NOTE: 320GB of disk capacity per data cartridge. NOTE: Mounts in DL385 G7 second drive cage slot (320GB of Disk Storage)	AP725A
	HP StorageWorks RDX500 Internal Removable Disk Backup System for DL Servers NOTE: 500GB of disk capacity per data cartridge. NOTE: Mounts in DL385 G7 second drive cage slot (500GB of Disk Storage)	AP726A
	HP StorageWorks RDX750 Internal Removable Disk Backup System for DL Servers NOTE: 750GB of disk capacity per data cartridge. NOTE: Mounts in DL385 G7 second drive cage slot (750GB of Disk Storage)	AW578A
	NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP StorageWorks tape backup products see: http://www.hp.com/go/connect.	
	HP DL385G7 8SFF Cage Kit	607248-B21
HP Processors	**Twelve-Core Processors**	
	AMD Opteron™ Processor Model 6176SE (2.3 GHz, 12MB Level 3 Cache, 105W)	585322-B21
	AMD Opteron™ Processor Model 6174 (2.2 GHz, 12MB Level 3 Cache, 80W)	585320-B21
	AMD Opteron™ Processor Model 6172 (2.1 GHz, 12MB Level 3 Cache, 80W)	585324-B21
	Eight-Core Processors	
	AMD Opteron™ Processor Model 6136 (2.4 GHz, 12MB Level 3 Cache, 80W)	585326-B21
	AMD Opteron™ Processor Model 6134 (2.3 GHz, 12MB Level 3 Cache, 80W)	585328-B21
	AMD Opteron™ Processor Model 6128 (2.0 GHz, 12MB Level 3 Cache, 80W)	585330-B21
	AMD Opteron™ Processor Model 6128HE (2.0 GHz, 12MB Level 3 Cache, 65W)	585332-B21
	NOTE: Second processor kits include additional two fans.	
HP Memory	NOTE: DIMM banks are active only when the corresponding processor socket is populated. NOTE: For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator	
	Registered DIMMs (RDIMMs)	
	HP 2GB 2Rx8 PC3-10600R-9 Kit	593907-B21
	HP 4GB 1Rx4 PC3-10600R-9 Kit	593911-B21
	HP 4GB 1Rx4 PC3L-10600R-9 Kit	604500-B21
	HP 8GB 2Rx4 PC3-10600R-9 Kit	593913-B21
	HP 8GB 2Rx4 PC3L-10600R-9 Kit	604502-B21
	HP 16GB 4Rx4 PC3-8500R-7 Kit	593915-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 2GB 2Rx8 PC3-10600E-9 Kit	593921-B21
	HP 4GB 2Rx8 PC3-10600E-9 Kit	593923-B21
	NOTE: PC3L is a low voltage memory	

HP Optical Drives	HP Slim SATA DVD-ROM Optical Drive	481041-B21
	HP Slim SATA DVD-RW Optical Drive	481043-B21
	NOTE: Included in performance models.	
HP Hard Drives	NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.	
	NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.	
	SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives	
	HP 300GB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
	HP 300GB 3G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	492620-B21
	HP 146GB 6G SAS 15K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
	HP 146GB 3G SAS 15K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	504062-B21
	HP 146GB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507125-B21
	HP 146GB 3G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	418367-B21
	HP 72GB 6G SAS 15K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512545-B21
	HP 72GB 3G SAS 15K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	418371-B21
	SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives	
	HP 450GB 6G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516816-B21
	HP 450GB 3G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	454232-B21
	HP 300GB 6G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516814-B21
	HP 300GB 3G SAS 15K LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	416127-B21
	SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
	HP 500GB 6G SAS 7.2K rpm SFF (2.5inch) Midline 1yr Warranty Hard Drive	507610-B21
	SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
	HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507616-B21
	HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507614-B21
	HP 1TB 3G SAS 7.2K rpm LFF(3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	461137-B21
	HP 750GB 3G SAS 7.2K rpm LFF(3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	461135-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)	
	SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
	HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21
	HP 160GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	530888-B21
	SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
	HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	507632-B21
	HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	454146-B21

	HP 750GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458930-B21
	HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21
	HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458926-B21
	SATA Hot Plug SFF (2.5-inch) Entry (ETY) Drives	
	HP 250GB 3G SATA 5.4K rpm SFF (2.5-inch) Entry 1yr Warranty Hard Drive	460355-B21
	SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives	
	HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	571230-B21
	HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	458945-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide)	
	SATA Hot Plug Midline (MDL) Solid State Drives	
	HP 60GB 3G SATA 2.5in MDL 1y Wty SSD	572071-B21
	HP 120GB 3G SATA 2.5in MDL 1y Wty SSD	572073-B21
	SATA Hot Plug 3.5" Midline (MDL) Solid State Drives	
	HP 60GB 3G SATA 3.5in MDL 1y Wty SSD	570761-B21
	HP 120GB 3G SATA 3.5in MDL 1y Wty SSD	570763-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.html (Worldwide)	
HP Networking	Gigabit Ethernet adapters	
	HP NC112T PCIe Gigabit Server Adapter	503746-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
	HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21
	10 Gigabit Ethernet adapters	
	HP NC522SFP Dual Port 10GbE Server Adapter NOTE: A minimum of 2 gigabytes (2 GB) of server memory is required per each NC522SFP adapter. NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. NOTE: The shared network port is only supported in the secondary riser connection using the dual port 10GbE riser.	468332-B21
	HP NC550SFP Dual Port 10GbE Server Adapter NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each NC550SFP adapter. NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.	581201-B21

NOTE: Please see the QuickSpecs for additional information: www.hp.com/go/ProLiantNICs.

HP InfiniBand	HP InfiniBand 4X DDR Conn-X PCI-E G2 Dual Port HCA	483514-B21
	HP InfiniBand 4X DDR PCI-E 0 Memory Dual Port HCA	483513-B21
HP I/O Expansion Options	HP DL38X (1) x16 PCI-E riser kit	494323-B21
	HP DL38X (2) x8 Dual Port 10GbE Riser Kit NOTE: This riser card will support Qty 2 of 10Gbe NICs or can be used for 2 additional PCIe Gen2 cards. NOTE: The shared network port is only supported in the secondary riser connection.	494326-B21
	HP DL385 x8/2x4 PCI-E riser kit	581783-B21
	HP DL385 G7 PCI-X riser kit	581785-B21
HP Power Supplies	HP 460W CS HE Gold Power Supply	503296-B21
	HP 750W CS HE Gold Power Supply	512327-B21
	HP 1200W-48V DC Common Slot Power Supply NOTE: DC power supplies contain a -48V DC power cord designed for in rack DC power rectifiers.	437573-B21

HP Insight Software	**HP Insight Control**	
	HP Insight Control, Single-Server License including 1 year of 24x7 Technical Support and Updates	452148-B22
	HP Insight Control suite, No Media, Electronic License including 1 year of 24x7 Technical Support and Updates	T9074BAE
	HP Insight Control, Electronic License for bundling with ProLiant ML/DL server, including 1 year of 24x7 Technical Support and Updates	TC278AAE
	HP Insight Control, Tracking License for bundling with ProLiant ML/DL server, including 1 year of 24x7 Technical Support and Updates	TC275A
	NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key. NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. NOTE: Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. NOTE: For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html	
	HP Insight Control for Linux	
	HP Insight Control for Linux, 1-server license, including one year of 24x7 Technical Support and Updates, Electronic	TC213AAE
	HP Insight Control for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates	TC209A
	HP Insight Control for Linux, Media pack (DVD) - No licenses included NOTE: Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately. NOTE: Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: http://www.hp.com/go/ic-linux (click on Download button). NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys. NOTE: For additional License Kits, including electronic licensing options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html	TC208A
	HP Integrated Lights-Out (iLO) Advanced	
	HP Integrated Lights-Out Advanced, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates	512485-B21
	HP ProLiant Essentials Integrated Lights-Out Advanced Pack, Electronic, including 1 year of 24x7 Technical Support and Updates	TA850AAE
	HP Insight Software Media Kit NOTE: Insight Software DVD media without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Insight Dynamics, HP Insight Control for Microsoft System Center, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.	436222-B21

	NOTE: This license allows 1 server to be deployed and managed via HP iLO Advanced. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service NOTE: For additional license kits, including electronic delivery options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html	
HP Drive Cage Options	HP DL385G7 8SFF Cage Kit	607248-B21
HP Security - TPM	HP Trusted Platform Module Option Kit	488069-B21
HP Storage Controllers	SAS Controllers	
	HP Smart Array P212 Controller	
	HP Smart Array P212/Zero Memory Controller	462828-B21
	HP Smart Array P212/256 MB Controller	462834-B21
	HP Smart Array P410 Controller	
	HP Smart Array P410/256 MB Controller	462862-B21
	HP Smart Array P410/512 MB with BBWC Controller	462864-B21
	HP Smart Array P410/512MB with FBWC	578230-B21
	HP Smart Array P410/1G with FBWC	572532-B21
	HP Smart Array P411 Controller	
	HP Smart Array P411/256 MB Controller	462830-B21
	HP Smart Array P411/512 MB with BBWC Controller	462832-B21
	HP Smart Array P411/512MB Flash Backed Write Cache	578229-B21
	HP Smart Array P411/1G Flash Backed Write Cache	572531-B21
	HP Smart Array P812 Controller	
	HP Smart Array P812/1G Flash Backed Cache Controller	487204-B21
	Optional Upgrades	
	256 MB Cache Module NOTE: Supported on HP Smart Array P212 Controller and HP Smart Array P410/Zero Memory Controller only.	462968-B21
	512MB BBWC	462967-B21
	Battery Kit upgrade NOTE: To enable BBWC on the 256MB cache.	462969-B21
	512MB Flash Backed Write Cache	534916-B21
	1G Flash Backed Write Cache	534562-B21
	HP Smart Array Advanced Pack No Media 1-Server license including 1yr 24x7 Technical Support NOTE: This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP	516471-B21

	Software Technical Support Services.	
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html (Smart Array P212 Controller) http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html (Smart Array P410 Controller) http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html (Smart Array P411 Controller) http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html (Smart Array P812 Controller) http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html (Smart Array Advanced Pack)	
	SAS Controller Options	
	HP SAS Expander Card	468406-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/13232_div/13232_div.html (SAS Expander Card)	
	SCSI HBA	
	HP SC11Xe Host Bus Adapter	412911-B21
	NOTE: Recommended HBA for SCSI tape drive connect.	
	NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html (SC11Xe HBA)	
HP Backup & Recovery Software	HP Data Protector Express	
	HP Data Protector Express 4.0 SP1 Backup Server	BB117BA
	HP Data Protector Express 4.0 SP1 for Microsoft Small Business Server	BB118BA
	HP Data Protector Express Backup Server 4.0 SP1Upgrade from Data Protector Express Single Server Edition	BB117BT
	NOTE: One of these Data Protector Express base products is required. To see available options: http://www.hp.com/go/dataprotectorexpress	

Additional Options

HP Tape Backup

NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP StorageWorks tape backup products see: http://www.hp.com/go/connect.

HP StorageWorks DAT 320 USB Tape Drive in 1U USB Rack Kit	AP835A
HP StorageWorks DAT 320 SAS Internal Tape Drive NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	AJ830A
HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	EH847A
HP StorageWorks LTO-4 Ultrium 1760 Tape Drive in 1U SAS Rack Kit NOTE: Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	EH946B
HP StorageWorks LTO-5 Ultrium 3000 Tape Drive in 1U SAS Rack Kit NOTE: Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	EJ014A
HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader NOTE: Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	AK377A
HP StorageWorks MSL2024 Tape Library with one LTO-4 Ultrium 1760 SAS Drive NOTE: Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	AK378A
HP StorageWorks MSL4048 Tape Library with two LTO-4 Ultrium 1760 SAS Drives NOTE: Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	AK380A

HP Disk Backup

NOTE: For the complete range of StorageWorks D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of StorageWorks RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP StorageWorks disk backup products see: http://www.hp.com/go/connect.

HP StorageWorks D2D Backup Systems with Backup Data Deduplication

HP StorageWorks D2D2502i Backup System NOTE: 1.5TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EJ001A
HP StorageWorks D2D2503i Backup System NOTE: 2.25TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EH945A
HP StorageWorks D2D4004i Backup System NOTE: 3.0TB (expandable to 7.5TB) of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EH938A

	HP StorageWorks D2D4112fc Backup System NOTE: 9.0TB (expandable to 18.0TB) of useable network disk backup capacity. Fibre Channel SAN connected appliance. Direct server attach is not supported, requires connection via SAN fabric.	EH993A
	HP StorageWorks RDX Removable Disk Backup Systems USB NOTE: Connect the USB tape power connector to the secondary SAS power connector on the system board. Refer to the hood label for SAS power connector locations on the system board. NOTE: Mounts in DL385 G7 second drive cage slot.	
	HP StorageWorks RDX320 Internal Removable Disk Backup System for DL Servers NOTE: 320GB of disk capacity per data cartridge.	AP725A
	HP StorageWorks RDX500 Internal Removable Disk Backup System for DL Servers NOTE: 500GB of disk capacity per data cartridge.	AP726A
	HP StorageWorks RDX750 Internal Removable Disk Backup System for DL Servers NOTE: 750GB of disk capacity per data cartridge.	AW578A
HP StorageWorks Options	StorageWorks Fibre Channel HBA NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	Brocade Fibre Channel HBAs	
	HP StorageWorks 81B PCI-e FC HBA Single Port	AP769A
	HP StorageWorks 82B PCI-e FC HBA Dual Port	AP770A
	HP StorageWorks 41B 4Gb PCI-e FC HBA	AP767A
	HP StorageWorks 42B 4Gb Dual-Port PCI-e FC HBA	AP768A
	Emulex Fibre Channel HBAs	
	HP StorageWorks 81E PCI-e FC HBA Single Port	AJ762A
	HP StorageWorks 82E PCI-e FC HBA Dual Port	AJ763A
	HP StorageWorks FC2142 4Gb PCI-e HBA	A8002A
	HP StorageWorks FC2242 Dual Channel 4Gb PCI-e HBA	A8003A
	QLogic Fibre Channel HBAs	
	HP StorageWorks 81Q PCI-e FC HBA Single Port	AK344A
	HP StorageWorks 82Q PCI-e FC HBA Dual Port	AJ764A
	HP StorageWorks FC1142 4Gb PCI-e HBA	AE311A
	HP StorageWorks FC1242 Dual Channel 4Gb PCI-e HBA	AE312A
	StorageWorks SCSI HBA	
	HP U320e SCSI Host Bus Adapter NOTE: Recommended HBA for MSL SCSI Tape Library connect.	AH627A
	StorageWorks Converged Network Adapter	
	HP CN1000E 2P Converged Network Adapter	AW520A

Additional Options

HP Modular Smart Array	**MSA SAN Storage Arrays**	
	HP StorageWorks 60 Modular Smart Array	418408-B21
	NOTE: Please see the QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html	
	HP StorageWorks 70 Modular Smart Array	418800-B21
	NOTE: Please see the QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html (Worldwide)	
	Disk Enclosures	
	HP StorageWorks D2700 Disk Enclosure	AJ941A
	NOTE: Please see the QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html	
HP Uninterruptible Power Systems	**HP Rack-mountable UPS**	
	HP R1500 G2 UPS	
	HP, R1.5kVA UPS, 1U, NA	AF419A
	HP, R1.5kVA UPS, 1U, INTL	AF418A
	HP, R1.5kVA UPS, 1U, JPN/TW	AF421A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html (Worldwide)	
	HP Rack-Mountable R5500 UPS	
	HP R5500 VA UPS, INTL	AF416A
	HP R5500 VA UPS, NA/JPN	AF426A
	HP R/T3000 Uninterruptible Power System (UPS)	
	HP R/T3000 UPS, High voltage, NA/JPN	AF453A
	HP R/T3000 UPS, High voltage, detachable inlet cord INTL	AF454A
	NOTE: Additional HP Uninterruptible Power Systems (UPS) are available for this equipment. For information on all HP UPSs and accessories please go to www.hp.com/products/ups (Worldwide)	
	NOTE: For additional information on sizing your HP UPS, please reference: http://www.upssizer.com	

Additional Options

Power Distribution Units	**HP Monitored Power Distribution Unit: Half Rack Version**	
	HP 4.9 kVA S124 Monitored PDU- single input, 1Ø, 24A (NA/JPN)	AF914A
	HP 7.3 kVA S132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF915A
	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A (NA/JPN)	AF504A
	HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A (NA/JPN)	AF506A
	HP 11 kVA S1316 Monitored PDU- single input, 3Ø, 16A (INTL)	AF508A
	HP 7.3 kVA S1132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF510A
	NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html (Worldwide)	
	Modular Power Distribution Units 1U/0U (Up to 32 outlets)	
	NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	
	HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan)	252663-D72
	8.3kVA Model - mPDU, 40A, High (power cord attached) (NA/JPN)	252663-D73
	HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)	252663-B31
	HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW)	252663-B24
	NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements.	
	NOTE: Please see the following QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html (Worldwide)	
	NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu.	
HP Rack Series	**HP Rack 10000 G2 Series** (Carbon/Graphite Metallic)	
	10642 G2 (42U) Rack Cabinet - Pallet	AF001A
	10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
	NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.	
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html (Worldwide)	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	

Additional Options

HP Rack Options	**HP Server Console Switches**	
	HP Server console switch 0x2x8	AF616A
	HP Server console switch 0x2x16	AF617A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html (Worldwide)	
	HP Server Console Switch G2 with Virtual Media & CAC	
	0x2x16 KVM Server Console G2 Switch with Virtual Media and CAC	AF618A
	0x2x32 KVM Server Console G2 Switch with Virtual Media and CAC	AF619A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html (Worldwide)	
	HP IP Console Switch G2 with Virtual Media & CAC	
	1x1Ex8 KVM IP Console Switch G2 with Virtual Media and CAC	AF620A
	2x1Ex16 KVM IP Console Switch G2 with Virtual Media and CAC	AF621A
	4x1Ex32 KVM IP Console Switch G2 with Virtual Media and CAC	AF622A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html (Worldwide)	
HP USB and SD Options	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 4GB SD Flash Media Kit NOTE: Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at: http://www.hp.com/go/proliantvirtualization.	580387-B21
	HP 2GB USB Flash Media Drive Key NOTE: HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software like SmartStart. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.	608447-B21

Additional Options

HP Care Pack Services	**Hardware Services Response On-site Service**	
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4496E
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 4 Years, Electronic	U8099E
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 5 Years, Electronic	U8065E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4497E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 4 Years, Electronic	U8116E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 5 Years, Electronic	U8082E
	Hardware Services Call to Repair On-site Service	
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4498E
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 4 Years, Electronic	U9736E
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 5 Years, Electronic	U9735E
	24-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UP711E
	24-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 4 Years, Electronic	UP712E
	24-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 5 Years, Electronic	UP713E
	Installation & Start-up Services	
	Hardware Installation, Electronic	UA008E
	Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	UA007E
	Support Plus	
	Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4508E
	Support Plus 24	
	Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4509E
	Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U6310E

NOTE: For more information, customer/resellers can contact: http://www.hp.com/services/carepack.

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

Memory configurations

- This server supports 2GB to 256GB of system memory using DDR3 2GB, 4GB, 8GB, and 16GB memory modules across 24 memory sockets.
- For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator

Advanced ECC memory

- Advanced ECC memory is the memory protection mode for this server. In Advanced ECC, the server does not fail because of correctable memory errors. The server provides notification if the level of correctable errors exceeds a pre-defined threshold rate.
- Advanced ECC provides additional protection over standard ECC because it is possible to correct certain memory errors that would otherwise be uncorrectable and result in a server failure.
- Whereas standard ECC can correct single-bit memory errors, Advanced ECC can correct single-bit memory errors and multi-bit memory errors if all failed bits are on the same DRAM device on the memory module.

Population order

- The two tables below represent the memory module population order for one processor. The population order for the other processor is identical. SR denotes Single Rank, DR denotes Dual Rank, and QR denotes Quad Rank.
- All memory modules must follow the population order shown in these two tables for both processors with the following exception:
- QR memory modules must be installed only in memory sockets 2, 5, 8, and 11, while following the population order for those memory sockets.

Processor memory socket	1	2	3	4	5	6
Rank support per memory socket	SR/DR	SR/DR/QR	SR/DR	SR/DR	SR/DR/QR	SR/DR
Population order	A	I	E	C	K	G
Processor memory channel	A	A	A	B	B	B

Processor memory socket	7	8	9	10	11	12
Rank support per memory socket	SR/DR	SR/DR/QR	SR/DR	SR/DR	SR/DR/QR	SR/DR
Population order	B	J	F	D	L	H
Processor memory channel	C	C	C	D	D	D

Population rules

When installing memory modules, observe the following population rules:

- Use only HP memory modules listed in this document.
- Advanced ECC is not available if x4 and x8 memory modules are mixed in channels (A and B), (C and D), or both, but standard ECC is still available. Advanced ECC is available if x4 and x8 memory modules are mixed in memory channels (A and C), (B and D), or both.
- No more than two UDIMMs may be installed per channel.
- Do not mix UDIMMs and RDIMMs within this server.

Population guidelines

While adhering to the memory population rules ("Population rules" - see above), performance can be improved by following the guidelines below:

- Memory modules may be installed one at a time per processor, but installing two at a time per processor provides for additional performance, installing four at a time per processor provides for better performance, and installing equal amounts of memory for both processors provides for best performance.
- Install all memory modules of the same speed on the same processor for best performance.
- Install all memory modules of the same voltage on the same processor for best power.

Memory bus speed

Depending on the quantity and native speed of memory modules installed, memory bus speeds can be 1333 MHz, 1066 MHz, 800 MHz, or 667 MHz. Memory bus speeds can be different for each processor.

To determine memory bus speeds, do the following:

Within RBSU, select the Power Management Options menu > Advanced Power Management Options menu > Maximum Memory Bus Frequency menu.

- Select one of the following menu options:
  - Auto (default) - The memory bus speed is set to what is shown in the following table. If the native speed of the installed memory module is slower than the memory bus speed, the memory bus speed is set to the memory module native speed

Memory modules per channel	QR	SR or DR	Memory module native speed	Memory bus speed (standard-voltage memory module)	Memory bus speed (low-voltage memory module)
1	-	1*	SR 1333 MHz DR 1333 MHz DR 1066 MHz	1333 MHz	1333 MHz
1	1	-	QR 1066 MHz	1066 MHz	1066 MHz
2	-	2*	SR 1333 MHz DR 1333 MHz DR 1066 MHz	1333 MHz	1333 MHz
2	1	1	SR 1333 MHz DR 1333 MHz DR 1066 MHz QR 1066 MHz	800 MHz	800 MHz
3	-	3 SR	SR 1333 MHz	1066 MHz	1066 MHz
3	-	3 DR	DR 1333 MHz DR 1066 MHz	1066 MHz	800 MHz
3	-	3 mixed	SR 1333 MHz DR 1333 MHz DR 1066 MHz	1066 MHz	800 MHz
3	1	2	SR 1333 MHz DR 1333 MHz DR 1066 MHz QR 1066 MHz	800 MHz	667 MHz

*These are the only configurations supported by UDIMMs. All configurations listed in this table are supported by RDIMMs. This table is for reference only.

  - 800 MHz-The memory bus speed is set to 800 MHz regardless of the quantity of memory modules installed, unless the table above reflects a slower memory bus speed.
    NOTE: There may be more than one memory bus speed menu option.
    NOTE: LVDIMM support is dependent on the ROM version

Memory Installation Examples

Memory

These memory installation examples show the memory sockets associated with the first processor only. If there is a second processor installed, like for a performance model, then these examples can be applied toward the memory sockets associated with the second processor also.

2 RDIMMs per processor

- Standard memory: 2x2GB RDIMMs (4GB per processor)
- Optional memory: Adding 10x8GB RDIMMs to standard memory (84GB per processor)
- Maximum memory: Replacing standard memory with 4x16GB QR RDIMMs and 8x8GB DR RDIMMs (maximum of 128GB per processor)

Processor memory socket	1	2	3	4	5	6
Standard Memory	2GB DR					
Optional Memory	2GB DR	8GB DR	8GB DR	8GB DR	8GB DR	8GB DR
Maximum Memory	8GB DR	16GB QR	8GB DR	8GB DR	16GB QR	8GB DR

Processor memory socket	7	8	9	10	11	12
Standard Memory	2GB DR					
Optional Memory	2GB DR	8GB DR	8GB DR	8GB DR	8GB DR	8GB DR
Maximum Memory	8GB DR	16GB QR	8GB DR	8GB DR	16GB QR	8GB DR

2 UDIMMs per processor

- Standard memory: 2x2GB UDIMMs (4GB per processor)
- Optional memory: Adding 6x4GB UDIMMs to standard memory (28GB per processor)
- Maximum memory: Replacing standard memory with 8x4GB UDIMMs (maximum of 32GB per processor)

Processor memory socket	1	2	3	4	5	6
Standard Memory	2GB DR					
Optional Memory	2GB DR		4GB DR	4GB DR		4GB DR
Maximum Memory	4GB DR		4GB DR	4GB DR		4GB DR

Processor memory socket	7	8	9	10	11	12
Standard Memory	2GB DR					
Optional Memory	2GB DR		4GB DR	4GB DR		4GB DR
Maximum Memory	4GB DR		4GB DR	4GB DR		4GB DR

4 RDIMMs per processor

- Standard memory: 4x2GB RDIMMs (8GB per processor)
- Optional memory: Adding 8x8GB RDIMMs to standard memory (72GB per processor)
- Maximum memory: Replacing standard memory with 4x16GB QR RDIMMs and 8x8GB DR RDIMMs (maximum of 128GB per processor)*

Processor memory socket	1	2	3	4	5	6
Standard Memory	2GB DR			2GB DR		
Optional Memory	2GB DR	8GB DR	8GB DR	2GB DR	8GB DR	8GB DR
Maximum Memory	8GB DR	16GB QR	8GB DR	8GB DR	16GB QR	8GB DR

Memory

Processor memory socket	7	8	9	10	11	12
Standard Memory	2GB DR			2GB DR		
Optional Memory	2GB DR	8GB DR	8GB DR	2GB DR	8GB DR	8GB DR
Maximum Memory	8GB DR	16GB QR	8GB DR	8GB DR	16GB QR	8GB DR

* If you have a 2P system and want the maximum memory of 256GB installed, you will need to replace all standard memory with 8x16GB QR RDIMMs and 16x8GB DR RDIMMs.

Following are memory options available from HP:

HP Memory

NOTE: DIMM banks are active only when the corresponding processor socket is populated.

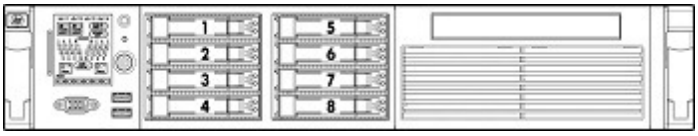
Registered DIMMs (RDIMMs)

HP 2GB 2Rx8 PC3-10600R-9 Kit	593907-B21
HP 4GB 1Rx4 PC3-10600R-9 Kit	593911-B21
HP 4GB 1Rx4 PC3L-10600R-9 Kit	604500-B21
HP 8GB 2Rx4 PC3-10600R-9 Kit	593913-B21
HP 8GB 2Rx4 PC3L-10600R-9 Kit	604502-B21
HP 16GB 4Rx4 PC3-8500R-7 Kit	593915-B21

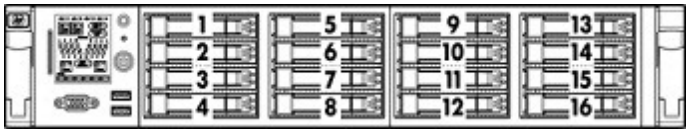
Unbuffered with ECC DIMMs (UDIMMs)

HP 2GB 2Rx8 PC3-10600E-9 Kit	593921-B21
HP 4GB 2Rx8 PC3-10600E-9 Kit	593923-B21

NOTE: PC3L is a low voltage memory



1-8 Eight SFF SAS hot plug hard drive bays



1-16 Sixteen SFF SAS hot plug hard drive bays
NOTE: This configuration does not support optical drive.
NOTE: This configuration requires a second controller or SAS Expander Card.

1-6 Six LFF SAS hot plug hard drive bays
NOTE: This configuration does not support optical drive.
NOTE: This configuration replaces SFF hard drive cage.

NOTE: Connect the SAS power cable from the primary drive cage (drive cage containing SFF drives 1-8 or LFF drives 1-6) to the primary SAS power connector on the system board. If a secondary drive cage (drive cage containing SFF drives 9-16) is installed, connect a SAS power cable from the secondary drive cage to the secondary SAS power connector on the system board. Refer to the hood label for SAS power connector locations on the system board.

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
Slim SATA DVD RW Optical Drive NOTE: Included in performance models.	Only 1 available removable media bay	Slimline bay	Integrated SATA
Slim SATA DVD-ROM Optical Drive	Only 1 available removable media bay	Slimline bay	Integrated SATA

Hard Drives

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.
NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
NOTE: IMPORTANT: Installation of both SAS and SATA hard drives or a mixture of SSDs and traditional hard drives in a single RAID volume is not supported.

SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
300GB 6G SAS 10K DP	Up to 16	1-8	HP Smart Array P212/Zero Memory Controller
300GB 3G SAS 10K DP		1-16	HP Smart Array P212/256 MB Controller
146GB 6G SAS 15K DP		NOTE:	HP Smart Array P410/256 MB Controller

146GB 6G SAS 10K DP 146GB 3G SAS 15K DP 146GB 3G SAS 10K DP 72GB 6G SAS 15K DP 72GB 3G SAS 15K DP		Depending on Model	HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
450GB 6G SAS 15K DP 450GB 3G SAS 15K DP 300GB 6G SAS 15K DP 300GB 3G SAS 15K DP	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
500GB 6G SAS 7.2K DP	Up to 16	1-8 1-16 NOTE: Depending on Model	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
2TB 6G SAS 7.2K DP 1TB 6G SAS 7.2K DP 1TB 3G SAS 7.2K DP 750GB 3G SAS 7.2K DP	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
500GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 16	1-8 1-16 NOTE: Depending on Model	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller

HP Smart Array P411/512 MB BBWC Controller
HP Smart Array P812/512 BBWC Controller

SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
2TB 3G SATA 7.2K 1TB 3G SATA 7.2K 750GB 3G SATA 7.2K 500GB 3G SATA 7.2K 250GB 3G SATA 7.2K	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SATA Hot Plug SFF (2.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 5.4K	Up to 16	1-8 1-16 NOTE: Depending on Model	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SATA Hot Plug Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD 120GB 3.0G SATA SSD	Up to 16	1-8 1-16	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SATA Hot Plug 3.5" Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD 120GB 3.0G SATA SSD	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
60 Modular Smart Array	Up to 8	External	HP Smart Array P812/512 BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 BBWC Controller
	Up to 4	External	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller
70 Modular Smart Array	Up to 4	External	HP Smart Array P800/512 BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller
D2700 Disk Enclosure	Up to 2	External	HP Smart Array P212/ 256 MB Controller
	Up to 4		HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller

Maximum Storage Capacity - (with MSA70)

Internal	8.0TB (16 x 500GB SAS/SATA)
External	12.5TB (250 x 500GB SAS/SATA SFF)
Total	20.5TB

Tape and Disk Backup

NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media, including the internal fitting models, see: http://www.hp.com/go/tape. For the complete range of StorageWorks D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of StorageWorks RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP StorageWorks disk and tape backup products see: http://www.hp.com/go/connect.

	Position Supported	Controller	Controller Part Number
HP StorageWorks SCSI Tape Drives LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960	External	HP SC11Xe Host Bus Adapter	412911-B21

LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit		NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	
HP StorageWorks USB Tape Drives DAT 40 DAT 72 DAT 160 DAT 320 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
HP StorageWorks SAS Tape Drives DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/Zero Memory Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	462828-B21
HP StorageWorks SCSI Tape Autoloaders DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Host Bus Adapter NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	412911-B21
HP StorageWorks SCSI Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	HP U320e SCSI Dual Channel Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	AH627A
HP StorageWorks SAS Tape Autoloaders and Libraries 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/Zero Memory Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	462828-B21

Storage

HP StorageWorks Fibre Channel Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs.	N/A
HP StorageWorks USB RDX Removable Disk Backup System RDX160 RDX320 RDX500 RDX750	Internal or External	USB 2.0 Port	N/A
HP StorageWorks D2D Backup Systems, iSCSI D2D2500i D2D4000i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	
HP StorageWorks D2D Backup Systems, Fibre Channel D2D4000fc	External	Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/go/connect	N/A

Power Specifications

HP 460W Power Supply Part Number - AC 460W PSU	503296-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage	460	460	460	460	460	460	460
Nominal Input Current (A rms)	5.5	4.5	2.6	2.5	2.4	2.3	2.2
Maximum Rated Input Wattage Rating (Watts)	526	520	505	505	503	503	503
Maximum Rated VA (Volt-Amp)	548	542	527	527	524	524	524
Efficiency (%) at Max. Rated Output Wattage	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30	30	30	30	30	30	30
Maximum Inrush Current duration (mS)	20	20	20	20	20	20	20
Maximum British Thermal Unit Rating (BTU-Hr)	1794	1773	1725	1725	1715	1715	1715
HP 750W Power Supply Part Number - AC 750W PSU	512327-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage	750	750	750	750	750	750	750
Nominal Input Current (A rms)	8.9	7.4	4.3	4.1	3.9	3.7	3.6
Max Rated Input Wattage Rating (Watts)	857	847	824	825	820	820	820
Max. Rated VA (Volt-Amp)	894	884	859	859	854	854	854
Efficiency (%)at Max. Rated Output Wattage	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Max. Inrush Current (A peak)	30	30	30	30	30	30	30
Max. Inrush Current duration (mS)	20	20	20	20	20	20	20
Maximum British Thermal Unit Rating (BTU-Hr)	2925	2892	2812	2812	2797	2797	2797

Power Specifications

HP 1200W PSU 48VDC Input Part Number	437573-B21		
Input Voltage Range (DCV)	36-72		
Frequency Range (Nominal) (Hz)	DC		
Nominal Input Voltage (Vrms)	**36**	**48**	**72**
Maximum Rated Output Wattage	1200	1200	1200
Nominal Input Current (A rms)	38	28	19
Max Rated Input Wattage Rating (Watts)	1380	1350	1365
Max. Rated VA (Volt-Amp)	1380	1350	1365
Efficiency (%)at Max. Rated Output Wattage	87	89	88
Power Factor	N/A	N/A	N/A
Leakage Current (mA)	N/A	N/A	N/A
Max. Inrush Current (A peak)	20	25	35
Max. Inrush Current duration (mS)	1	1	3
Maximum British Thermal Unit Rating (BTU-Hr)	4713	4610	4662

NOTE: To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor

- Click on "ProLiant Servers"
- Click on the Server of interest. Example: DL385 G7
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

System Unit	**Dimensions** (H x W x D) (with bezel)	3.38 x 17.54 x 27.25 in (8.59 x 44.54 x 69.98 cm)	
	Weight (approximate)	Maximum (all hard drives, power supply, and processor installed)	60 lb (27.22 kg)
		Minimum (one hard drive, power supply, and processor installed)	45.90 lb (20.81 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100 to 120 VAC 200 to 240 VAC
		Rated Input Current	For 1200 W Power Supply: 10 A (at 100 VAC), 4.9 A (at 200 VAC) For 750 W Power Supply: 8.9 A (at 100 VAC), 4.3 A (at 200 VAC) For 460 W Power Supply: 5.5 A (at 100 VAC), 2.6 A (at 200 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	For 1200 W Power Supply: 930 W (at 100 VAC), 1348 W (at 200 VAC) For 750 W Power Supply: 857 W (at 100 VAC), 824 W (at 200 VAC) For 460 W Power Supply: 526 W (at 100 VAC), 505 W (at 200 VAC)
	BTU Rating	Maximum	For 1200 W Power Supply: 3530 BTU/hr (at 100 VAC), 4600 BTU/hr (at 200 VAC) For 750 W Power Supply: 2925 BTU/hr (at 100 VAC), 2812 BTU/hr (at 200 VAC) For 460 W Power Supply: 1794 BTU/hr (at 100 VAC), 1725 BTU/hr (at 200 VAC)
	Power Specifications	NOTE: To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor	
	Power Supply Output (per power supply)	Rated Steady-State Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC),

		750 W (at 200 to 240 VAC) For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)
	Maximum Peak Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC) For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)
System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

Idle		1P SKU	2P SKU
	LWAd	4.7 B	4.6 B
	LpAm	22 dBA	27 dBA
Operating		1P SKU	2P SKU

		LWAd	4.9 B	6.0 B
		LpAm	29 dBA	43 dBA
	Emissions Classification (EMC)	FCC Rating	Class A	
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1	

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

HP Integrated Lights-Out 3 (iLO 3) integrated on system board	Architecture	PCI Express based health and remote management ASIC
	Processor	PCI Express RISC processor core running at 250MHz
	Upgradeability	Option firmware upgradeable via Flash ROM.
	Video Support	1600 x 1200 DVR max resolution
	Interfaces	One Ethernet Sideband connection (10/100/1000 Mb/s)
		One Ethernet network connection (10/100Mb/s)
	Memory	128-MB DDR with ECC
	Operating System Support	Microsoft Windows 2008 R2
		Microsoft Windows 2008 (32 bit and 64 bit)
		Microsoft Windows Server 2008 Standard Edition (32bit and 64bit)
		Microsoft Windows Server 2008 Enterprise Edition (32bit and 64bit)
		Microsoft Windows Server 2003 and Windows Server 2003 R2, and Windows Server 2003 for Extended Systems Standard Edition, Enterprise Edition
		Red Hat Enterprise Linux 5.4 (32 bit and 64 bit)
		SUSE LINUX Enterprise Server 11 (32bit and 64bit)
		SUSE LINUX Enterprise Server 10 (32bit and 64bit)
		VMware ESX 4.0
		VMware ESX 3.5.0
	Client System Support	Microsoft Windows 7
		Microsoft Windows XP Professional Edition
		Microsoft Windows Vista Business and Ultimate Editions
		Red Hat Enterprise Desktop 5.00
		SUSE Linux Enterprise Desktop 11
		SUSE Linux Enterprise Desktop 10

	Client Browser Support	Microsoft Internet Explorer 8
		Microsoft Internet Explorer 7
		Microsoft Internet Explorer 6
		Firefox 3.5 (on supported Windows and Linux systems)
		Firefox 3.0 (on supported Windows and Linux systems)
	Command Line Support	Secure Shell and serial port access
		Secure Socket Layer
		Secure Shell version 2
	Security	Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface
		AES encryption of video
		RC4 encryption of video
	Directory Support Services	Active Directory v1.0 (Windows 2003)
	Driver Support	HP ProLiant iLO3 Management Controller Driver Package
	Management protocols supported	SNMP, IPMI 2.0 (system and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML
Smart Array P410i Controller	Disk Drive and Enclosure Interface - Transfer rate	6Gb/s SAS (Serial Attached SCSI)
		3Gb/s SATA (Serial ATA)
	SAS Connectors	2 internal (Mini-SAS) x4 wide port connectors (per connector)
	Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	X4 5GT/s PCIe Gen2 provides 2GB/s maximum bandwidth
	SAS Speed	x8 6Gbps SAS provides 4.8GB/s maximum bandwidth
	Cache Memory	40-bit 256MB ECC protected cache (72-bit 512MB BBWC module upgrades available); transportable with battery-backed upgrade
	Logical Drives Supported	Up to 64 logical drives
	Maximum Logical Drive Capacity	Greater than 2TB
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 6+0 (Advanced Data Guarding) NOTE: The minimum of 256 MB cache, battery kit, and Smart Array Advanced Pack License Key upgrade is required to enable RAID 6, 6+0
		RAID 5, 5+0 (Distributed Data Guarding) NOTE: The 256 MB is required to enable RAID 5, 5+0 support of the Smart Array P410i
		RAID 1+0 (Striping & Mirroring)
		RAID 0 (Striping)

Technical Specifications

Two HP NC382i Dual Port Multifunction Gigabit Server Adapters	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Controller	Broadcom5709C	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000Mb/s
	Connector	Two RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000BaseTX	Category 5 or higher UTP; up to 328 ft (100 m)

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.